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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/764,797

01/26/2004

Zhiping Shan

1094-47

9767

28249 7590 09/16/2009  
DILWORTH & BARRESE, LLP  
1000 WOODBURY ROAD  
SUITE 405  
WOODBURY, NY 11797

EXAMINER

WARTALOWICZ, PAUL A

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

09/16/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/764,797	<b>Applicant(s)</b> SHAN ET AL.	
	<b>Examiner</b> PAUL A. WARTALOWICZ	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-23 and 25-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-23 and 25-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 8/11/09 have been fully considered but they are not persuasive.

Applicant has amended claim 25 to recite "combining a mixture consisting essentially of an inorganic oxide".

However, when applicant amends claims to recite "consisting essentially of", the claims only exclude additional components that that do not materially affect the basic and novel characteristic(s)" of the claimed invention.

The transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. In re Herz, 537 F.2d 549, 551-52,190 USPQ 461, 463 (CCPA 1976) (emphasis in original) (Prior art hydraulic fluid required a dispersant which appellants argued was excluded from claims limited to a functional fluid "consisting essentially of" certain components. In finding the claims did not exclude the prior art dispersant, the court noted that appellants' specification indicated the claimed composition can contain any well-known additive such as a dispersant, and there was no evidence that the presence of a dispersant would materially affect the basic and novel characteristic of the claimed invention. The prior art composition had the same basic and novel characteristic (increased oxidation resistance) as well as additional enhanced detergent and dispersant characteristics.). "A consisting essentially of" claim occupies a middle ground between closed claims that

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are written in a consisting of' format and fully open claims that are drafted in a comprising' format." PPG Industries v. Guardian Industries, 156 F.3d 1351, 1354, 48 USPQ2d 1351, 1353-54 (Fed. Cir. 1998). See also Atlas Powder v. E.I. duPont de Nemours & Co., 750 F.2d 1569, 224 USPQ 409 (Fed. Cir. 1984); In re Janakirama-Rao, 317 F.2d 951, 137 USPQ 893 (CCPA 1963); Water Technologies Corp. vs. Calco, Ltd., 850 F.2d 660, 7 USPQ2d 1097 (Fed. Cir. 1988). For the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to "comprising." See, e.g., PPG, 156 F.3d at 1355, 48 USPQ2d at 1355 ("PPG could have defined the scope of the phrase consisting essentially of' for purposes of its patent by making clear in its specification what it regarded as constituting a material change in the basic and novel characteristics of the invention."). MPEP 2111.03 [R-3].

It does not appear that the specification has illustrated components that are to be excluded when the claim recites "consisting essentially of." Therefore, it does not appear that water is excluded as a component that "materially affect[s] the basic and novel characteristic(s)" of the claimed invention." MPEP 2111.03 [R-3].

Additionally, claims 1 and 14 recite "combining a mixture...of **a source of an inorganic oxide** with an organic..." It appears that a source of an inorganic oxide can include any mixture that can produce an inorganic oxide, i.e. an aqueous mixture of an inorganic salt. As source has not been defined in the specification, this common usage meaning of source is a valid interpretation.

Any special meaning assigned to a term “must be sufficiently clear in the specification that any departure from common usage would be so understood by a person of experience in the field of the invention.” MPEP 2111.01 [R-5] (IV).

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3, 5-23 and 25-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The recitation in claims 1, 14, and 25 in part (b) of “at a complexation temperature in conjunction with the **removal of any water**” (emphasis added) does not appear to have support in the specification. The specification appears to have support for the removal of most of the water produced by the reaction, but not for all water produced by the reaction.

### ***Claim Rejections - 35 USC § 103***

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3, 5, 15-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Overbeek (US 2002/0111522) in view of Pinnavaia et al. (U.S. 6410473).

Overbeek teaches a method of making zeolites [0001] wherein alumina-silica is combined with TEAOH and heated at a temperature of 157°C [heating at this temperature in a circulating air furnace would inherently remove water produced during the reaction, 0042, 0043] and washing the solid formed with ample water and filtering [this disclosure appears to teach dissolving at least one complex in water and decomposing at least part of the complex, 0043] wherein the filtered product is heated to 200°C at a ramp of 5 °C/min and then heated to a temperature of 650°C at a temperature ramp of 5°C/min [it appears that this disclosure teaches aging, drying, and calcining as specified by the claims which would inherently decompose part of the complex , 0044].

Overbeek fails to teach recovering and recycling at least a major portion of the organic complexing and pore-forming agent from the inorganic oxide framework by solvent extraction with the claimed solvent.

Pinnavaia et al., however, teach a method for making a mesoporous inorganic oxide (col. 1) wherein it is known to extract a templating agent with water for the purpose of recycling the templating agent (col. 8-9).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide extracting a templating agent with water in Cao et al. in order to recycle the templating agent (col. 8-9) as taught by Overbrook et al.

Regarding claim 21; the limitation "above atmospheric pressure" appears to be open to pressures very close to atmospheric such that the prior art range is so close that one skilled in the art would have expected it to have the same properties. *Titanium Metals Corp. v. Banner*, 227 USPQ 773.

Claims 6-11, 22, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Overbeek (US 2002/0111522) in view of Pinnavaia et al. (U.S. 6410473) and Cao (U.S. 6660682).

Overbeek teaches a process as described above in claim 1.

Overbeek fails to teach that a preformed zeolite is added to the aqueous mixture.

Cao, however, teaches a method of making a molecular sieve (col. 1) wherein a zeolite material is added to an aqueous solution containing silica, alumina, and a

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templating agent for the purpose of seeding the solution that produces a molecular sieve (col. 9).

As Cao teaches a zeolite material is added to an aqueous solution containing silica, alumina, and a templating agent for the purpose of seeding the solution that produces a molecular sieve (col. 9), it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to add a zeolite material to the aqueous solution of Overbeek in order to seed a mixture from which a molecular sieve is produced.

Overbeek fails to teach that the inorganic oxide source is magnesium oxide, aluminum hydroxide, or fumed silica.

Cao, however, teaches that sieves typically include magnesium oxide (col. 6) and fumed silica and aluminum hydroxide are used when producing a molecular sieve (col. 7,8 ).

As Cao teaches that sieves typically include magnesium oxide (col. 6) and fumed silica and aluminum hydroxide are used when producing a molecular sieve (col. 7,8 ), it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide magnesium oxide, fumed silica, and aluminum hydroxide as part of the inorganic oxide source in the process of Overbeek because these sources are well known inorganic oxide sources in the molecular sieve art.

Overbeek fails to teach that the templating agent is triethanolamine

Cao, however, teaches that the templating agent is triethanolamine (col. 8).



As Cao teaches that the templating agent is triethanolamine (col. 8), it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to use triethanolamine as the templating agent in the process of Overbeek as a substitute for TEOH as both templating agents comprise an ammonium group.

Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Overbeek (US 2002/0111522) in view of Ozin (US 5320822) and Pinnavaia et al. (U.S. 6410473).

Overbeek teaches a process as described above in claim 1.

Overbeek et al. fail to teach using ethylene glycol as the solvent.

Ozin et al., however, teach a method of making a molecular sieve (col. 1) wherein ethylene glycol is combined with the reaction mixture comprising an amine-containing templating agent for the purpose of providing a medium for crystal formation that does not interfere with the reaction (col. 6-7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide ethylene glycol is combined with the reaction mixture comprising an amine-containing templating agent in Overbeek et al. in order to provide a medium for crystal formation that does not interfere with the reaction (col. 6-7) as taught by Ozin et al.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Overbeek (US 2002/0111522) in view of Cao (U.S. 6660682).

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Overbeek teaches a process as described above in claim 1.

Overbeek fails to teach that a preformed zeolite is added to the aqueous mixture.

Cao, however, teaches a method of making a molecular sieve (col. 1) wherein a zeolite material is added to an aqueous solution containing silica, alumina, and a templating agent for the purpose of seeding the solution that produces a molecular sieve (col. 9).

As Cao teaches a zeolite material is added to an aqueous solution containing silica, alumina, and a templating agent for the purpose of seeding the solution that produces a molecular sieve (col. 9), it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to add a zeolite material to the aqueous solution of Overbeek in order to seed a mixture from which a molecular sieve is produced.

Regarding the limitation of the claimed X-ray diffraction pattern, it appears that the prior art of record teaches a substantially similar process as that of the claimed invention such that the properties of the product made by said prior art process are substantially similar to the properties of the product made by the claimed process.

Claims 25 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Overbeek (US 2002/0111522) in view of Ozin (US 5320822).

Overbeek teaches a method of making zeolites [0001] wherein alumina-silica is combined with TEAOH and heated at a temperature of 157°C [heating at this temperature in a circulating air furnace would inherently remove water produced during

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the reaction, 0042, 0043] and washing the solid formed with ample water and filtering [this disclosure appears to teach dissolving at least one complex in water and decomposing at least part of the complex, 0043] wherein the filtered product is heated to 200°C at a ramp of 5 °C/min and then heated to a temperature of 650°C at a temperature ramp of 5°C/min [it appears that this disclosure teaches aging, drying, and calcining as specified by the claims which would inherently decompose part of the complex , 0044].

Overbeek et al. fail to teach using ethylene glycol as the solvent.

Ozin et al., however, teach a method of making a molecular sieve (col. 1) wherein ethylene glycol is combined with the reaction mixture comprising an amine-containing templating agent for the purpose of providing a medium for crystal formation that does not interfere with the reaction (col. 6-7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide ethylene glycol is combined with the reaction mixture comprising an amine-containing templating agent in Overbeek et al. in order to provide a medium for crystal formation that does not interfere with the reaction (col. 6-7) as taught by Ozin et al.

Regarding the limitation of the claimed X-ray diffraction pattern, it appears that the prior art of record teaches a substantially similar process as that of the claimed invention such that the properties of the product made by said prior art process are substantially similar to the properties of the product made by the claimed process.

Claims 26 and 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Overbeek (US 2002/0111522) in view of Ozin (US 5320822) and Cao (U.S. 6660682).

Overbeek teaches a method as described above in claim 25.

Overbeek et al. fail to teach using ethylene glycol as the solvent.

Ozin et al., however, teach a method of making a molecular sieve (col. 1) wherein ethylene glycol is combined with the reaction mixture comprising an amine-containing templating agent for the purpose of providing a medium for crystal formation that does not interfere with the reaction (col. 6-7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide ethylene glycol is combined with the reaction mixture comprising an amine-containing templating agent in Overbeek et al. in order to provide a medium for crystal formation that does not interfere with the reaction (col. 6-7) as taught by Ozin et al.

Overbeek fails to teach that the templating agent is triethanolamine

Cao, however, teaches that the templating agent is triethanolamine (col. 8).

As Cao teaches that the templating agent is triethanolamine (col. 8), it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to use triethanolamine as the templating agent in the process of Overbeek as a substitute for TEAOH as both templating agents are amines.

Regarding claim 27, Ozin teaches the glycol solvent as described above in claim 25.

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL A. WARTALOWICZ whose telephone number is (571)272-5957. The examiner can normally be reached on 8:30-6 M-Th and 8:30-5 on Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Paul Wartalowicz  
September 9, 2009

/Stanley Silverman/  
Supervisory Patent Examiner

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